SOP for Reservoir Continuum Sampling  
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* Within-reservoir sites should be sampled as you move upstream (i.e., Site 50 -> Site 45 -> Site 30 -> Site 20)
* Stream sites should also be sampled in a downstream -> upstream manner (where applicable).
* All sites should be sampled following the procedure below:
  1. Collect **EEMs sample**
     1. Use an acid-washed syringe to suck up a small amount of sample water and filter (but do not collect!) through the filter and filter cartridge. This serves as a sample rinse for both the syringe and the filter/filter cartridge
     2. Use syringe to suck up ~ 20 mL of sample water, then filter sample water into previously combusted glass vial. ONLY fill the vial ¾ full (in order to prevent cracking when freezing; especially important for freshwaters)
     3. Store in the dark bag, put in cooler with ice as soon as possible, and transport back to the lab
     4. Repeat steps 1a-1d for Rep. 2
  2. Using the same syringe and filter cartridge (and changing to an un-ashed GF/F filter if necessary), collect **soluble nutrient samples** at the surface
     1. Syringe should already be rinsed from EEMs sample collection
     2. Rinse soluble bottle with filtered water 1X
     3. Fill bottle ~3/4 full with filtered sample water
     4. Store in a cooler and transport back to the lab
     5. Repeat 2a-2d for Rep. 2
  3. Collect **total nutrient sample** at the surface
     1. Rinse bottle with sample water 3x
     2. Fill bottle ~3/4 full with sample water
     3. Store in a cooler and transport back to the lab
     4. Repeat 3a-3c for Rep 2
  4. Collect **chlorophyll-a sample**
     1. Fill 2L amber bottle with surface water
     2. Store in a cooler (if possible) and transport back to the lab
  5. Collect **BDOC sample** (at select sites and dates)
     1. Collect BDOC only at the following sites: B100, B20, B01, & B50 and F50, F30, F200, F99, F102
     2. Rinse bottle with sample water 3x
     3. Fill bottle with sample water
     4. Store in a cooler and transport back to the lab
  6. **Measure physical conditions** (water temperature, dissolved oxygen, and conductivity) at the surface
     1. **DO and YSI sensors should be calibrated before use**
     2. Make sure to record the sensor ID on the field datasheet
  7. At stream sites, **measure discharge**
     1. **At Site 200, measure discharge using the flowmeter method**
        1. At 0.1m intervals along the width of the stream, measure depth (cm) using a meter stick and velocity using a flow meter (ft/s or m/s—be sure to record the units\*\*)
           1. Velocity should be recorded at 1/3 of the total depth above the stream bed at a given width interval.
        2. Make sure to record the flow meter ID on the field datasheet.
     2. **At all other sites, use the salt slug method**
        1. Calculate a calibration curve once per sampling day at each reservoir (i.e., there will be one calibration curve for BVR and one for FCR on a given sampling day)
           1. Put a known amount of stream water in bucket (4L usually works well) and record the volume of water on the datasheet
           2. Measure baseline specific conductance in the bucket

Hit ‘mode’ once after turning on the probe to measurement ‘compensated’ conductivity

Make sure to scrub the bucket clean in stream water BEFORE measuring water into the bucket

* + - * 1. Add 5g of pre-weighed salt and measure specific conductance
        2. Repeat step 1c for 10g, 25g, 50g, and 100g of salt additions for a final salt addition of 190g
      1. At the monitoring site, collect a baseline specific conductance measurement before adding the salt slug upstream. Find a location for the conductivity probe in an unobstructed portion of the stream.
      2. Dissolve a known amount of salt in the bucket (~125g of salt per meter of stream width). Make sure all salt is dissolved by stirring.
      3. Several meters upstream of the probe, pour the salt solution quickly into the stream, being sure to rinse remaining residue from bucket and any utensil used to stir the solution into the stream as well.
      4. Immediately upon dumping the salt solution, begin timing and recording specific conductance measurements, starting at 0 seconds.
      5. Continue collecting specific conductance measurements at given time interval (3-5 seconds) until the specific conductance returns to the baseline reading.
         1. Time intervals can be adjusted once the specific conductance begins to slow in between readings, but the interval change must be recorded on the data sheet.

**Post-field processing**

* EEMs should be stored frozen in the divided, cardboard boxes they originally came in
* Total and soluble nutrients should be stored frozen
* Chlorophyll-a samples should be filtered as soon as possible upon returning to the lab. If this is not able to happen on the day of field sampling, the samples should be chilled in a refrigerator until they can be filtered. Refer to Chlorophyll-a SOP for filtering procedure.
* BDOC samples should be filtered within 48 hours. Refer to BDOC SOP for filtering procedure.
* Physical measurements, including discharge should be digitized at the earliest convenience.